REMARKS

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Office Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1, 2, 4-9, 11 and 12 are pending in the application, with Claim 1 being the sole independent claim. Claims 8 and 12 have been cancelled without prejudice. Claim 1 has been amended to, *inter alia*, recite the features of Claim 8. Support for the amendments may be found in the specification. Applicants submit that no new matter has been added.

Claims 1, 2, 4-9, 11 and 12 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Application Publication No. 2004/0201048 (Seki et al.) in view of U.S. Patent No. 5,470,760 (Nakai) and further in view of U.S. Patent Application Publication No. 2002/0187312 (Fonash et al.). This rejection is respectfully traversed.

Applicants' invention as recited in independent Claim 1, as amended, is directed to a method of manufacturing an optical element including at least a plurality of pixels formed on a substrate and partition walls arranged respectively between adjacent pixels. The method includes the steps of: forming partition walls from a resin composition containing carbon black on a substrate; performing a dry etching process by irradiating the substrate carrying the partition walls formed thereon with plasma in an atmosphere containing a gas selected from the group consisting of oxygen, argon and helium; performing a plasma treatment process by irradiating the substrate subjected to the dry etching process with plasma in an atmosphere containing at least fluorine atoms such that

the partition wall after the plasma treatment process shows a surface having a contact angle relative to pure water of not smaller than 110°; forming pixels by applying ink containing at least a setting ingredient, water, and an organic solvent to the areas surrounded by the partition walls by means of an ink-jet system; and setting the applied ink.

Thus, with the present invention, the surface of partition walls can be made sufficiently coarse so as to have a contact angle relative to pure water of not smaller than 110°. As a result, a very high ink-repellence can be realized which can effectively prevent intermingling of colors on the partition walls. Specifically, in the present invention, the partition walls are formed from a resin composition containing carbon black. The carbon black is exposed on the surface in the dry etching process and fluorine or a fluorine compound is bonded to the exposed carbon black in the plasma treatment process, thereby realizing the above-noted contact angle. See page 34, line 16 through page 35, line 1 of the specification.

Additionally, in the present invention, blank areas can be effectively prevented because ink applied to a recess defined by the partition walls fills the recess. The spreading tendency of the ink is suppressed by the ink-repellence of the surface of the partition walls at and near the top of the partition walls. The ink applied at an enhanced rate (amount) reduces its volume as a result of the setting step. If the partition walls have a large surface coarseness, the partition walls will have a large surface area contacting the ink. As a result, the ink can easily maintain contact with the partition walls regardless of the ink-repellence of the surface of the partition walls. Thus, the surface of the pixel can be flat after the ink is completely set, thereby preventing the unevenness of density in the pixel.

Seki et al. is directed to a method of forming a thin film patterning substrate including formation of banks. As a tenth embodiment, Seki et al. discloses that a substrate having a black matrix formed from a resin is subjected to an oxygen plasma treatment and then a CF_4 plasma treatment. Applicants submit, however, that Seki et al. does not teach or suggest forming pixels by applying ink containing at least a setting ingredient, water, and an organic solvent to the areas surrounded by the partition walls and then setting the ink, as recited in Claim 1. Additionally, as the Examiner acknowledges, Seki et al. does not teach or suggest forming partition walls from a resin composition containing carbon black, as recited in Claim 1. To remedy this deficiency, the Examiner cites to Nakai.

Nakai is directed to a solid state imaging device having partition walls for partitioning bottom portions of micro lenses. Nakai discloses that the partition walls may be formed from an acrylic resin incorporating carbon black. From this disclosure, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to use carbon black as the black pigment in the black matrix of Seki et al. Applicants respectfully disagree.

Applicants note that there is no indication in Nakai that use of carbon black in the partitions provides any advantages over use of other black pigments or dyes. In fact, Applicants submit that Nakai does not provide any teaching or motivation for the selection of carbon black for use in a resin, particularly a resin subjected to the dry etching and plasma treatment processes disclosed in Seki et al. Applicants submit therefore, that the Examiner's reliance on Nakai is misplaced. Additionally, Applicants submit that Nakai fails to teach or suggest, at least, forming pixels by applying ink containing at least a

setting ingredient, water, and an organic solvent to the areas surrounded by the partition walls and then setting the ink, as recited in Claim 1.

Fonash et al. was cited for disclosing that a carbon black/halogenated polymer has a water contact angle in excess of 100 degrees. Applicants submit, however, that there is no teaching or suggestion that carbon black incorporated into another type of polymer would have a similar water contact angle. That is, there is no teaching or suggestion that the carbon black is responsible for the water contact angle in the carbon black/halogenated polymer complex. Additionally, Applicants submit that neither Seki et al. nor Nakai teaches or suggests use of a carbon black/halogenated polymer. Accordingly, Applicant submits that the Examiner's reliance on Fonash et al. is misplaced. Moreover, Applicants submit that Fonash et al. does not teach or suggest, at least, forming pixels by applying ink containing at least a setting ingredient, water, and an organic solvent to the areas surrounded by the partition walls and then setting the ink, as recited in Claim 1.

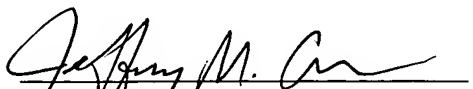
Accordingly, in view of the foregoing, Applicants submit that none of the cited references teaches or suggests important features of Applicants' presently claimed invention. Reconsideration and withdrawal of the rejection under § 103 are requested.

Applicants respectfully submit that the present invention is patentably defined by independent Claim 1. Dependent Claims 2, 4-7, 9 and 11 are also allowable, in their own right, for defining features of the present invention in addition to those recited in independent Claim 1. Individual consideration of the dependent claims is requested.

Applicants submit that the application is in condition for allowance. Favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



Jeffrey M. Connor
Attorney for Applicants
Registration No. 57,409

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3800
Facsimile: (212) 218-2200

JMC/gmc

DC_MAIN 242514v1